SEWER BASIS OF DESIGN REPORT
FOR
PIMA MCDOWELL SHOWROOM

Scottsdale, Arizona

23 July 2021

PREPARED FOR
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Scottsdale, Arizona 85251

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SITE ADDRESS
8705 East McDowell Road
Scottsdale, Arizona 85257

PREPARED BY
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CYPRESS # 21.120

TABLE OF CONTENTS

INTRODUCTION: PROJECT DESCRIPTION AND LOCATION

The Project is known as 'Pima McDowell Showroom' and is located at 8705 East McDowell Road in Scottsdale, Arizona. The proposed project consists of the renovation of the existing onsite buildings and addition of a new warehouse and storage yard.

The utility provider for sewer facilities is the City of Scottsdale.

EXISTING CONDITIONS

Per available utility maps and as-built records, an existing 8" PVC sewer 15,000 square feet, and has an existing 6" service lateral connecting to said main in Willetta Road. Refer to Appendix A for City of Scottsdale Sewer Quarter Section Map.

PROPOSED CONDITIONS

The existing 15,000 SF building is intended to be redeveloped by the new user as showroom with the addition of a new 20,000 SF warehourse and 4,000 SF storage yard. The design team intends to retain the existing sewer service connection for the redeveloped building. The sewer service is anticipated to provide adequate sizing to service the redeveloped Project. Refer to Appendix B for Preliminary Site Plan.

REQUIRED COMPUTATIONS

EXISTING SEWER DEMAND:
Average Day Demand (Commercial/Retail): 0.5 GPD/SF x 15,000 SF = 7,500 GPD
Peak Demand(Commercial/Retail): 3 x 7,500 = 22,500 GPD

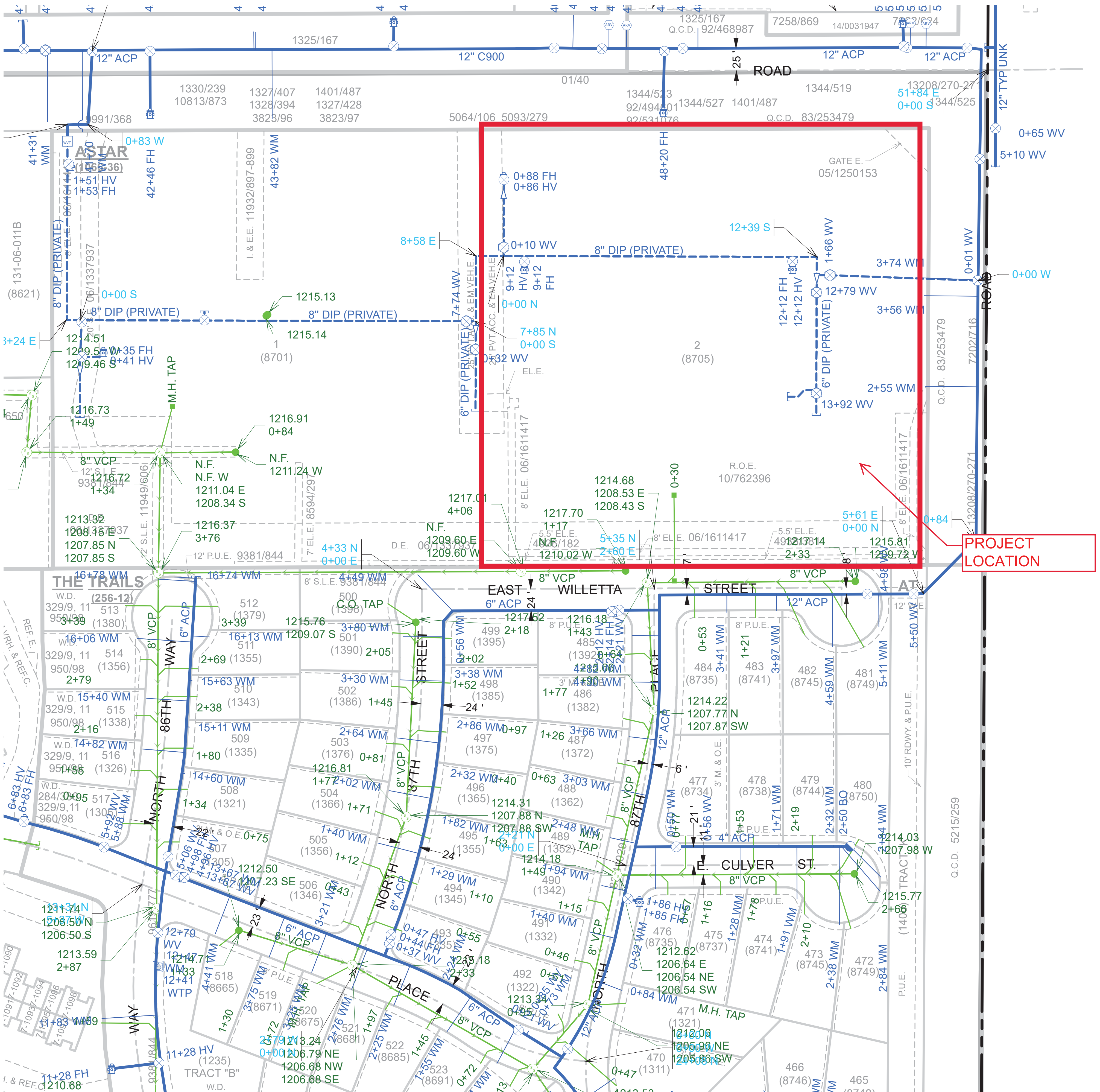
PROPOSED SEWER DEMAND:
Average Day Demand (Commercial/Retail): 0.5 GPD/SF x 39,000 SF = 19,500 GPD
Peak Demand (Commercial/Retail): 3 x 19,500 = 58,500 GPD

The proposed demand will increase from the existing condition. A sewer flow calculation demonstrates that the capacity in the sewer service connection is an order of magnitude larger than the projected flows. See Appendix C for Sewer Flow Calculation.

CONCLUSION

CYPRESS respectfully submits this report as the Wastewater Design Report for the proposed the Pima McDowell Showroom Development. The proposed wastewater system shall be designed in accordance with ADEQ, International Building Code, and the City of Scottsdale standards.

Appendix A
City of Scottsdale Sewer Quarter Section Map



GENERAL NOTES:

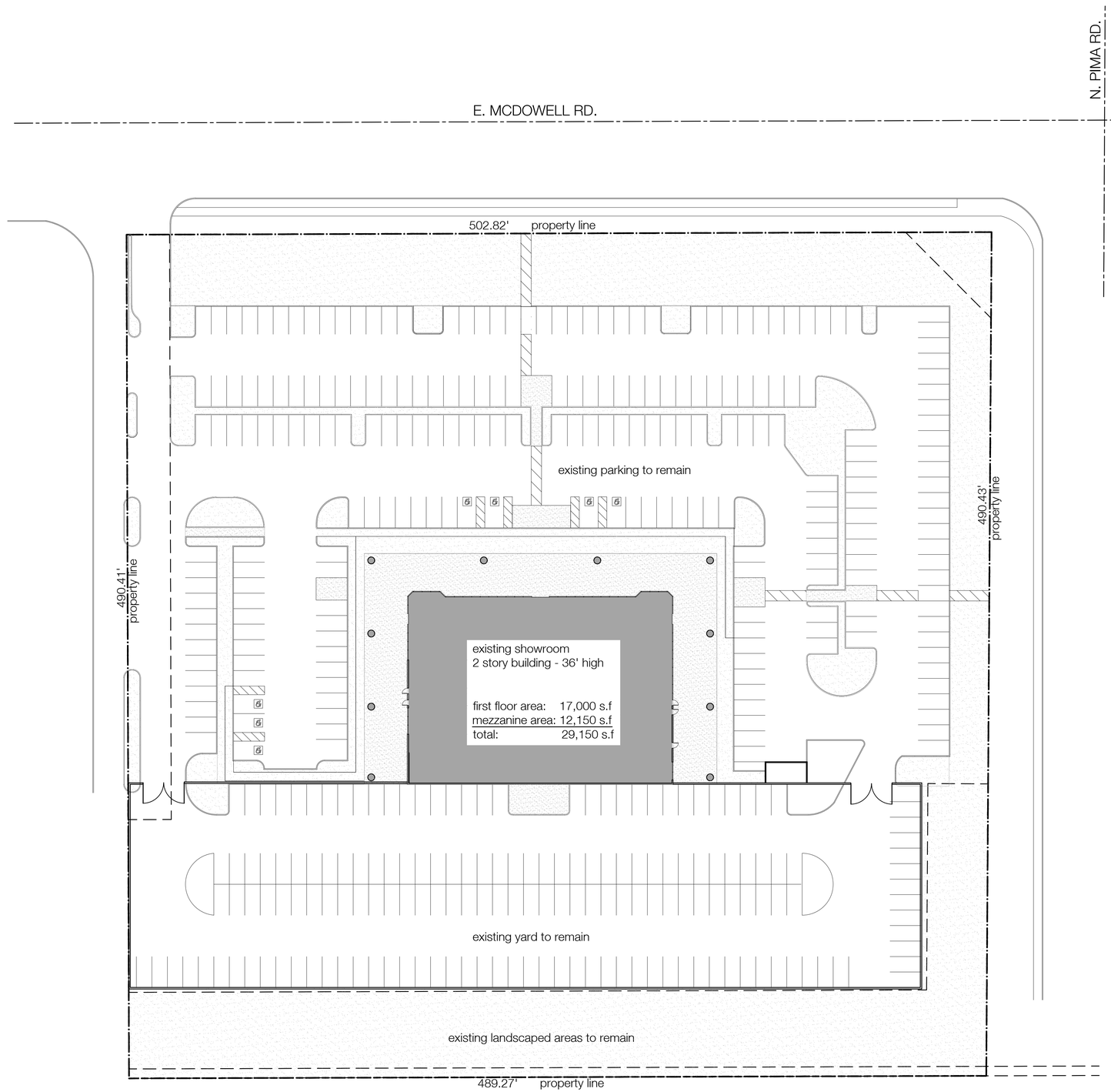
- THIS IS A COMPUTER GENERATED DRAWING. FOR ANY REVISIONS PLEASE CONTACT THE CITY OF SCOTTSDALE GIS DEPARTMENT AT (480) 312-7792.
- THE SECTION LINE BEARING AND DISTANCES ARE BASED ON THE CITY OF SCOTTSDALE GPS SURVEY OF SEPTEMBER, 1991. BEARINGS ARE NAD 83 GRID AND DISTANCES ARE FLATTENED TO GROUND. WHERE NO CORNER WAS FOUND THE DIMENSIONS ARE GIVEN TO CALCULATED SECTION CORNERS AND ARE NOTED AS 'CALCULATED' ON THE MAP.

LEGEND:

- Water Valve
- Non-potable Water Valve
- Fire Hydrant
- Water Blowoff
- Water Main Reducer
- Water Sample Station
- Water Air Release Valve
- Non-potable Water Air Release Valve
- Water Pressure Reducing Valve
- Water Vault
- Water Manhole
- Non-Potable Water Manhole
- Water Pump
- Water Main
- Non-Potable Water Main
- Fire Line
- Water Service
- Non-Scottsdale Water Main
- Sewer Manhole
- Sewer Cleanout
- Sewer Lift Station
- Sewer Treatment Plant
- Sewer Main - Gravity
- Sewer Main - Force
- Non-Scottsdale Sewer Main
- Sewer Service

Appendix B
Preliminary Site Plan

SITE PLAN
UPDATED
08-23-2021



SITE PLAN
1/32" = 1'-0"

APPLICABLE CODES

2015 international building code
2015 international mechanical code
2015 international fire code
2015 international energy conservation code
2015 international green construction code
2014 national electric code
2015 international plumbing code
2015 international existing building code
2009 international code council / american national standards institute a117.1 accessibility code
2010 americans with disabilities act acessibility guidelines

PROJECT SUMMARY

proposal is for the change of zoning from C-4 to C-3. the site is not subject to change.

LEGAL DESCRIPTION

recorded in book 872 of maps, page 31. being a portion of the northeast quarter of section 1, township 1 north, range 4 east of the gila & salt river meridian, maricopa county, arizona.

SITE DATA

apn	131-07-561
site area (net)	245,471 s.f. or 5.63 acres
site area (gross)	314,456 s.f. or 7.22 acres
existing zoning	C-4
proposed zoning	C-3
FAR allowed: 0.8	actual FAR = 29,150 s.f. / 245,471 s.f. = 0.12

BUILDING DATA

first floor area	17,000 s.f.
mezzanine area	12,150 s.f.
building area total	29,150 s.f.
occupancy type	B (business)
construction type	II-B (sprinklered)
maximum height	75'-0"

GENERAL LIMITATIONS

construction type	II-B (sprinklered)
allowable area	69,000 sq. ft.
building total area	29,150 sq. ft.
allowable height	75'-0" (4 stories)
actual height	36'-0" (2 stories)

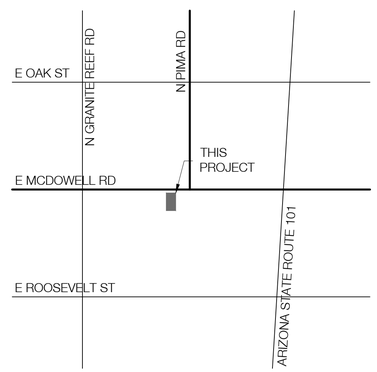
PARKING CALCULATIONS

vehicle parking

required	(medical office) 29,150 s.f./ 250 = 117
	accessible (101-150 spaces-4%) = 5
	117 spaces total (5 accessible)
provided	192 (7 accessible)

OPEN SPACE CALCULATIONS

max. building height = 36'-0" (36'-0" allowed)
first 12' of height = 10% x net lot area
= .10 x 245,471 = 24,547.1 s.f.
next 24' of height = 24' X .004 X 245,471 = 23,565 s.f.
open space required (not including parking lot landscaping)
24,547+23,565 = 48,112 s.f.
open space provided = 57,361 s.f.
open space distribution - frontage: 0.5 x 57,361 s.f. = 28,680 s.f.
open space provided in frontage = 28,866 s.f.
parking lot landscaping required
parking lot area x 15%
94,775 s.f. x .15 =14,187 s.f.
parking lot landscaping provided = 21,006 s.f.



VICINITY MAP
NTS

REZONING APPLICATION
planning no.: 582-PA-2021

revisions

preliminary not for construction

PIMA MCDOWELL
8705 e. mcdowell rd.
scottsdale, arizona 85257

date issued: august 13, 2021
project # 21033

7340 EAST MAIN STREET #210
SCOTTSDALE, ARIZONA 85251
MADEWITHALINE.COM

ALINE
ARCHITECTURE CONCEPTS

SITE PLAN
A-1.0

Appendix C
Sewer Flow Calculation

CYPRESS CIVIL

SITE CONSULTING
SURVEY
SITE ENGINEERING

Sewer Design Report Calculations
Pima McDowell Showroom

Sewage Flow Per Day (From DSPM 7-1.403)

Total Flow (GPD)	19,500
Dry Peaking Factor	3.000
Dry Peak Flow (GPD)	48,750

$$Q = \frac{1.49}{n} A R^{2/3} S^{1/2}$$

Where:
Q = flow in cfs
n = Manning's Roughness Coefficient
A = Cross sectional area of flow

SYSTEM MINIMUM SLOPE

n =	0.013
Pipe diameter (in) =	6
Pipe Slope (ft/ft) =	0.01

Full Flow*

Depth of flow (in) =	4.50
ϕ (radian) =	4.19
Area (in2) =	22.75
Wetted Perimeter (in) =	12.57
Hydraulic Radius (in) =	1.81
Velocity (ft/sec) =	3.25
d/D ratio =	0.75
Pipe Capacity (GPD)	331,562

Design Flow

Depth of flow (in) =	3.79
ϕ (radian) =	3.68
Area (in2) =	18.84
Wetted Perimeter (in) =	11.03
Hydraulic Radius (in) =	1.71
Velocity (ft/sec) =	3.12
d/D ratio =	0.63

SYSTEM MAXIMUM SLOPE

n =	0.013
Pipe diameter (in) =	6
Pipe Slope (ft/ft) =	0.02

Full Flow*

Depth of flow (in) =	4.50
ϕ (radian) =	4.19
Area (in2) =	22.75
Wetted Perimeter (in) =	12.57
Hydraulic Radius (in) =	1.81
Velocity (ft/sec) =	4.59
d/D ratio =	0.75
Pipe Capacity (GPD)	468,899

Design Flow

Depth of flow (in) =	2.60
ϕ (radian) =	2.87
Area (in2) =	11.74
Wetted Perimeter (in) =	8.62
Hydraulic Radius (in) =	1.36
Velocity (ft/sec) =	3.80
d/D ratio =	0.43

**Full Flow refers to d/D of 0.75 per AAC R18-9-E301.4.01.D.2.e*